

# THERAPEUTIC CONSUMPTION FOR IMPROVED PERFORMANCE. IS THERE A RISK?

**Ana Isabel Fernandes<sup>1</sup>, Elsa Pegado<sup>2</sup>, Helder Raposo<sup>2</sup>, Telmo Clamote<sup>2</sup>, Noémia Lopes<sup>1,2</sup>**

<sup>1</sup>CiiEM, Instituto Superior de Ciências da Saúde Egas Moniz, Monte de Caparica, Portugal (aifernandes@egasmoniz.edu.pt)

<sup>2</sup>CIES, Instituto Universitário de Lisboa, Lisboa, Portugal

## INTRODUCTION

- Although there have been reports on the use of medicines, food supplements and foods for performance enhancement, little is known about the prevalence, off-label uses pattern and associated risks in Portugal.
- Continued use of these lifestyle drugs can lead to physical and psychological dependence, and present severe interactions with other drugs and alcohol, thus representing an opportunity for pharmaceutical counselling and guidance.

## AIM

- Characterization of pharmacological and natural therapeutic consumption for physical, intellectual and social performance amongst youngsters.

## METHODS

- A national survey with non-proportional quota sampling was used.
- Focus groups (10 sessions; total n=57) were conducted previously and a questionnaire (n=1483) applied to university students (70%) and to workers with no higher studies (30%) between 18-29 y.o.
- Statistics (IBM-SPSS-21.0) considered a 95% confidence interval and results are expressed as % of responses.
- Ethics committee approval was obtained.

## RESULTS

- Therapeutic consumption for enhanced performance was reported by 71.9% of those inquired. Medicines (36.9%), food supplements (33.7%) and foods (29.4%) were equally consumed. Risk perception (in a scale 1-5) was higher for drugs (ranging between 2.9 and 4.09) and lower for natural products (2.37-3.44), but undervalued by users since consumption is sporadic.
- Amongst medicine consumers, psychotropic drugs were by far the most used (76.5%), represented mainly by anxiolytics (53.6% for the herbal medicine or food supplement valerian and 16.8% for alprazolam) and the anti-depressant fluoxetine (3.5%). Reported off-label uses take advantage of the indirect effects resulting from anxiety/depression control (e.g. better response to daily professional requirements).
- Foods and food supplements were classified according to their alleged function. Energizing drinks represent 39.9% of the total consumption of these products, followed by memory or concentration enhancers (25.3%). 52% of the food supplements consumed were sold in pharmacies strengthening the idea that these are frontier products and contributing to the potential confusion between medicines and food supplements.

## CONCLUSIONS

- The prevalence of therapeutic consumption among youngsters, especially of herbal psychotropics and energizing drinks, was high. However, our study does not validate the current thought that smart drugs' consumption (such as metilfenidate, modafinil and fluoxetine) is, at least in Portugal, generalized amongst youngsters.
- The study clearly demonstrates that legal boundaries between medicines, food supplements and foods are tenuous, and that natural and pharmacological consumption is intertwined. Adequate legislation is mandatory so that pharmacists can play a role in informed counselling of lifestyle drug users and in preventing health hazards related to their use.

